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conf. the bladder system during rain or snow conditions. In addition, filter 134 should be able to function properly following exposure to temperature extremes, perhaps ranging from negative 10 degrees Fahrenheit to positive 175 degrees Fahrenheit.

✓ Please replace the paragraph beginning on page 17, line 14 and extending through page 17, line 19 with the following:

a2 FIG. 6, which discloses the second embodiment of the present invention, depicts a cross-section of an article of footwear 100a having an upper 110a, a sole structure 120a, and a filter 134a. A pump 160a is located in the forefoot portion of footwear 100a and a bladder 190a is located in the heel portion of a midsole 122a. A conduit 170a having a valve 180a permits air to flow from pump 160a to bladder 190a. Filter 134a is attached to the upper surface of pump 160a such that air from within upper 110a may pass through filter 134a and enter pump 160a.

## REMARKS

The Office Action mailed May 22, 2002 has been carefully reviewed and, in view of the above amendments and following remarks, reconsideration and allowance of the application are respectfully requested.

### I. Discussion of Objections

#### *Objections to the Drawings*

The Examiner objected to the drawings for including numerical references 110a and 120a, which were not included in the specification. In response to the objection, the paragraph beginning on page 17, line 14 and extending through page 17, line 19 is amended to state that

footwear 100a includes an upper 110a and a sole structure 120a. The applicants submit that no new matter is added as a result of the amendment.

### *Objections to the Specification*

The Examiner objected to the specification for applying numerical reference 160 to both a pump and a conduit. In response to the objection, the paragraph beginning on page 17, line 14 and extending through page 17, line 19 is amended to associate numerical reference 170a with the conduit. In addition, the Examiner objected to the specification for reciting "bladder system 200." In response to the objection, the paragraph beginning on page 12, line 14 and extending through page 12, line 18 is modified to recite "the bladder system." The applicants submit that no new matter is added as a result of these amendments.

## **II. Summary of Rejections**

In the Office Action mailed May 22, 2002, the Examiner made the following claim rejections:

- Claim 1 was rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent Number 5,845,417 to Reed et al. (hereafter referred to as Reed);
- Claims 2-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over French Patent Application Number 2,670,369 to Colesnicenco (hereafter referred to as Colesnicenco) in view of U.S. Patent Number 4,507,880 to Ohashi (hereafter referred to as Ohashi);
- Claims 2-15 were also rejected under 35 U.S.C. §103(a) as being unpatentable over Reed in view of Ohashi; and

- Claim 16 was rejected under 35 U.S.C. §103(a) as being unpatentable over any one of the combinations of Colesnicenco/Ohashi and Reed/Ohashi in view of U.S. Patent Number 5,826,349 to Goss (hereafter referred to as Goss).

### III. Summary of Claims

Claims 1-16 are currently pending in the application, with claims 1 and 9 being independent claims. Independent claim 1 generally recites an article of footwear having an upper, a sole structure attached to the upper, an air-filled bladder in fluid communication with ambient air and attached to the footwear, and a filter in fluid communication with the ambient air and the bladder. The filter is structured to permit the ambient air to enter the bladder and restrict liquids and particulates from entering the bladder. Independent claim 9 generally recites a similar structure, wherein the filter is a polytetrafluoroethylene (PTFE) filter.

### IV. The Claims Patentably Distinguish Over The Applied Prior Art

#### *Independent Claim 1 Is Patentable Over Reed*

Reed discloses multiple embodiments of a ventilated shoe structure. In rejecting independent claim 1, the Examiner referred to two portions of the Reed specification, specifically column 8, lines 32-53 and column 9, line 66 to column 10, line 22. The embodiments discussed in these portions of the specification concern a sole that incorporates a pump, a plurality of conduits, and a filter. In operation, air located within the upper and around the foot passes through the filter and into a first of the conduits. The air then enters the pump, where the air is compressed, and is subsequently expelled from the shoe through a second conduit.

Although specific information regarding the structure of the filter is not provided, Reed states that “[m]oisture and liquid, along with air, may be drawn through the filter 214 and into the pump cell” (Reed, column 8, lines 48-49). In addition, Reed states that “air is drawn through the filter and into the inlet of intake tube 258. The air and/or liquid then passes through intake valve 264 and through the monotube 260 into the pump cell 254” (Reed, column 10, lines 4-7). The filter disclosed in Reed permits, therefore, the passage of both air and liquids.

Independent claim 1 recites “said filter being structured to permit ambient air to enter said bladder and restrict liquids and particulates from entering said bladder.” In contrast with the filter disclosed in Reed, independent claim 1 recites, a filter that restricts the passage of liquids. The Applicants respectfully submit, therefore, that independent claim 1 is patentably distinguished from Reed and is, therefore, allowable.

*Claims 2-15 Are Patentable Over The Combination of Colesnicenco and Ohashi*

Claims 2-8 incorporate the recitations of independent claim 1 and recite, therefore, an air-filled bladder and “a filter in fluid communication with said bladder and ambient air, said filter being structured to permit ambient air to enter said bladder and restrict liquids and particulates from entering said bladder.” Claims 9-15 recite a similar structure wherein the filter is a PTFE filter.

The rejection of claims 2-15 states that Colesnicenco discloses a filter structured to permit ambient air to enter the bladder and restrict liquids and particulates from entering the bladder. Enclosed, for the Examiner’s reference, is a professionally-prepared translation of Colesnicenco. Referring to page 3, lines 20-22 of the Colesnicenco translation, the air filter consists of “a filtering material (1b) such as felt or another filtering material.” Felt is recognized

as a cloth made of wool and fur often mixed with natural or synthetic fibers, or felt may be a firm woven cloth of wool or cotton heavily napped and shrunk. The recommendation that "felt or another filtering material" be utilized as the filter material in Colesnicenco does not teach or suggest the use of a filter that is structured to restrict the passage of liquids through the filter material, as claimed.

Furthermore, Ohashi teaches a skate boot wherein a portion of the sole is replaced by an air-permeable member that includes PTFE. Whereas Colesnicenco teaches mechanically-ventilated footwear that incorporates conduits, pumps, and valves to forcefully transfer air, Ohashi merely teaches the diffusion of air from the interior of the footwear to the exterior, and vice-versa, through the PTFE member. The fact that PTFE may be utilized in footwear is not sufficient to suggest to one skilled in the art that PTFE may be given a specialized purpose in a complex mechanical system that pumps air into the upper. Based upon the above discussion, neither Colesnicenco nor Ohashi incorporate a teaching or suggestion that would motivate one skilled in the relevant art to make the combination suggested in the rejection.

The Applicants respectfully submit, therefore, that claims 2-15 are patentable over the combination of Colesnicenco and Ohashi.

*Claims 2-15 Are Patentable Over The Combination of Reed and Ohashi*

As discussed with regard to the Colesnicenco/Ohashi rejection, claims 2-8 incorporate the recitations of independent claim 1 and recite, therefore, an air-filled bladder and "a filter in fluid communication with said bladder and ambient air, said filter being structured to permit ambient air to enter said bladder and restrict liquids and particulates from entering said bladder." Additionally, claims 9-15 recite a similar structure wherein the filter is a PTFE filter.

The filter disclosed in Reed permits the passage of liquids, as discussed above with respect to the §102 rejection of independent claim 1. In discussing conventional insoles, Reed states "it is very difficult to remove moisture and the odor produced as a result of moisture which collects in the shoe due to foot sweating caused by poor shoe ventilation. Since most people use their shoes for long periods of time, it is essential to properly maintain and ventilate the shoes in order to avoid foot diseases, such as, for example, water-eczema" (Reed, column 1, lines 24-30). A beneficial attribute of the system disclosed in Reed is the capacity for liquids to pass through the filter, thereby removing the liquids from the area surrounding the foot.

In contrast with Reed, Ohashi states "it is an object of the present invention to provide a boot which is excellent not only in durability, abrasion resistance, heat retaining property, waterproofness, stability and protection of the users' feet, but which also provides air permeability..." (Ohashi, column 1, lines 42-46). Additionally, Ohashi recognizes that PTFE may be utilized as a waterproof and air-permeable member.

The rejection of independent claim 9 generally states that it would have been obvious to combine the ventilation system of Reed with the PTFE material of Ohashi to allow the passage of air and prevent the passage of liquids and particles. In establishing a prima facie case of obviousness, the rejection must demonstrate a suggestion or motivation to modify the references. As discussed in MPEP §2143.01, the proposed modification cannot render the prior art unsatisfactory for its intended purpose, and the proposed modification cannot change the principle of operation of a reference.

Combining the PTFE material of Ohashi with the ventilation system of Reed would render Reed unsatisfactory for its intended purpose. As discussed above, the filter of Reed permits the passage of liquids in order to remove liquids from the area surrounding the foot,

thereby preventing conditions such as water-eczema. Utilizing the PTFE material of Ohashi would effectively prevent the passage of liquids, thereby rendering Reed unsatisfactory for its intended purpose of ventilating the footwear and removing water. Similar considerations demonstrate that the combination would also change the principle of operation of Reed.

The Applicants respectfully submit, therefore, that claims 2-15 are patentable over the combination of Reed and Ohashi.

*Dependent Claim 16 Is Patentable Over The Prior Combinations In Further View Of Goss*

Dependent claim 16 incorporates the limitations of dependent claim 14 and independent claim 9. As discussed above, independent claim 9 is patentably distinguishable from the combinations of Colcsnicenco/Ohashi and Reed/Ohashi. The teachings of Goss do not cure the omissions of the Colcsnicenco/Ohashi and Reed/Ohashi combinations. The Applicants respectfully submit, therefore, that dependent claim 16 is allowable over the applied prior art.

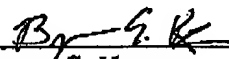
**V. Conclusion**

In view of the foregoing, Applicants respectfully submit that all pending claims are in condition for allowance. Applicants respectfully request, therefore, that the rejections be withdrawn and that this application now be allowed.

This Amendment is being timely filed with a one-month petition for extension of time by facsimile transmission on September 19, 2002. Should an extension of time or additional fee be deemed necessary for consideration of this Amendment, however, such extension or fee is hereby requested and the Commissioner is authorized to charge deposit account number 19-0733 for the payment of the requisite fee. If the Examiner believes that anything further is desirable in

order to place the application in even better form for allowance, then the Examiner is respectfully urged to telephone Applicants' undersigned representative at (503) 279-6330.

Respectfully submitted,

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Dated: September 19, 2002



**MARKED-UP VERSION OF THE SPECIFICATION TO SHOW  
CHANGES MADE BY AMENDMENT**

*IN THE SPECIFICATION:*

Please replace the paragraph beginning on page 12, line 14 and extending through page 12, line 18 with the following, wherein deleted material is set in brackets and added material is underlined:

Finally, filter 134 should operate under a variety of environmental conditions. In general, the criteria relating to water entry pressure should be sufficient to prevent water from entering the bladder system [200] during rain or snow conditions. In addition, filter 134 should be able to function properly following exposure to temperature extremes, perhaps ranging from negative 10 degrees Fahrenheit to positive 175 degrees Fahrenheit.

Please replace the paragraph beginning on page 17, line 14 and extending through page 17, line 19 with the following, wherein deleted material is set in brackets and added material is underlined:

FIG. 6, which discloses the second embodiment of the present invention, depicts a cross-section of an article of footwear 100a having an upper 110a, a sole structure 120a, and a filter 134a. A pump 160a is located in the forefoot portion of footwear 100a and a bladder 190a is located in the heel portion of a midsole 122a. A conduit [160a] 170a having a valve 180a permits air to flow from pump 160a to bladder 190a. Filter 134a is attached to the upper surface of pump 160a such that air from within upper 110a may pass through filter 134a and enter pump 160a.

**TRANSLATION OF FRENCH PATENT APPLICATION  
NUMBER 2,670,369 TO COLESNICENCO**

French Patent Application No. 2 670 369 A1

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Job No.: 2397-88789

Ref.: 005127.00094

Translated from French by the Ralph McElroy Translation Company  
910 West Avenue, Austin, Texas 78701 USA

FRENCH REPUBLIC  
NATIONAL INSTITUTE OF INDUSTRIAL PROPERTY  
PATENT APPLICATION NO. 2 670 369 A1

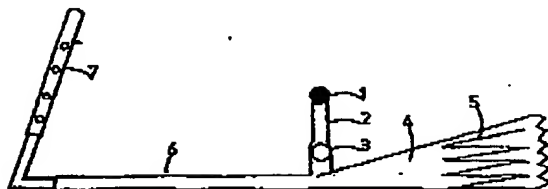
Int. Cl.<sup>5</sup>: A43B 7/06  
Filing No.: 90 15663  
Filing Date: December 14, 1990  
Date of Public Access  
to the Application: June 19, 1992 Bulletin 92/25

DEVICE FOR VENTILATION OF THE FEET BY INTRODUCTION OF FRESH AIR INTO  
CLOSED SHOES

Inventor: Colesnicenco Nicolae  
Applicant: Colesnicenco Nicolae

Abstract:

The invention concerns a device that produces a cycle of alternating successions of intakes and discharges of fresh air using the mechanical force produced by the heel during walking. It is provided with air filter (1), connecting tube (2), intake valve (3), bellows (4) provided with a spring (5), discharge tube (6), discharge valve (7). The bellows (4) is subjected by the heel of the user to the intake of fresh air alternating with its discharge, as a result of valves (3) and (7) which cause the fresh air to advance within the shoe. The device, designed for the shoe industry, is used for removing unpleasant odor produced by sweating.



The present invention concerns a device designed for ventilating the feet in closed shoes. As a result of this invention total removal of the unpleasantness from sweating is successfully achieved.

From the point of view of ventilation possibilities, traditionally shoes are either cut out or provided with lateral ventilation orifices or perforations, these possibilities not being sufficient to eliminate undesirable sweating.

The device according to this invention allows this drawback to be remedied.

This device may be included in the technical field of the leather and shoe industry and at the same time, it may be part of the production of small workshops.

It is possible either for the device to be incorporated in the shoe assembly or to be introduced later into a traditional shoe.

The device according to the invention includes the following principal elements:

- a vertical intake tube provided at the top with a filter
- an intake valve
- a bellows provided with a helical spring

a horizontal discharge tube provided with a valve which is opened when the air pressure value in the horizontally oriented tube reaches the value established by calculation, this happening by increase

According to the specific methods of the embodiment:

- the intake valve may either be part of the filter or intake tube - the vertical tube - or of the bellows of this device;
- the bellows may either be provided with two lateral springs located on the two sides, the left side and the right side of the bellows, or with a helical spring, located centrally

The attached drawings illustrate the invention according to the following method:

- Figure 1 represents the cross section of the filter of the device according to the invention;

- Figure 2 represents the vertical section of the intake tube and the intake valve of the device according to the invention;
- Figure 3 represents the cross section of the discharge tube with the valve that functions at a constant and predetermined pressure, represented with the discharge orifices for the ventilation air;
- Figure 4 represents the cross section of the bellows with helical spring, inside, placed centrally;
- Figure 5 represents the disassembled device;
- Figure 6 represents the cross section of the device according to the invention;
- Figure 7 represents the device according to the invention viewed from above;
- Figure 8 represents the sole in the state of rest;
- Figure 9 represents the sole tensioned by the heel.

In reference to these drawings, the device includes the air filter (1) located at the beginning of the vertical intake tube (2) that is provided inside with an intake valve (3) located at the bottom, very near the bellows (4), the bellows being provided with a helical spring (5) located centrally.

At the continuation of the bellows (4) is found the horizontal discharge tube (6) provided with a discharge valve (7), this tube finishing with small orifices (7c) for the discharge of air, thus liberated under pressure.

The air filter (1) represented in Figure 1 consists of:

- A rubber sleeve (1a) and a filtering material (1b) such as felt or another filtering material.

The intake tube (2) represented in Figure 2, connects the air filter (1) with the intake valve (3).

It is made of rubber.

The intake valve (3) is attached to the interior of the vertical intake tube (2) and is made from a mixture of rubber and plastic.

The valve (3) contains on the interior a tapering channel (3a) and a polystyrene bead (3b).

The horizontal discharge tube (6) begins from the valve (3), represented in Figure 2, in the intake tube; it is provided on the other end with the discharge valve (7) and represented with the valve and its orifices in Figure 3.

The valve (7) ensures the discharge of ventilation air starting from a pressure value of the air in the horizontal tube (6), established beforehand.

This valve has a rubber sleeve (7a), a sealing orifice (7b) and four discharge orifices (7c).

The horizontal discharge tube (6) ends with these orifices that ensure the distribution of ventilation air provided by the system that carries out the artificial pumping and conducts the air from the heel to the toes.

The bellows (4) represented in Figure 4 is closed and made with a rubberized surface or thin rubber, with a central helical springs made from steel wire attached within. This spring, in a state of tension during operation of the system, is buried in the mass of the bellows.

The operating principle of this device is represented by alternating pumping of the air produced by the movement of the heel of the foot during walking.

At the beginning, the bellows (4) is found in a state of rest and its entire volume is filled with air.

This is the situation that characterizes the state before the introduction of the foot into the shoe provided with this device.

At the moment of introduction of the foot into this shoe, the spring (5) is put in a state of tension and the volume of the bellows (4) is caused to decrease. In this state, the air from the bellows (4) is pushed under pressure.

This closes the intake valve (3) and it takes the direction allowed, from the discharge tube (6) after it meets the discharge valve (7) that opens at the moment when the value of the air pressure of the tube (6), while increasing, arrives at the value obtained by calculation.

When the foot is lifted during walking, the spring (5) is extended as a result of the potential energy accumulated previously in a state of tension, the volume of the bellows begins to increase, and subsequently the creation of a vacuum takes place in which the effect is the intake of fresh and filtered air by opening the intake valve.

The bellows is thus filled with ventilation air and when the heel descends, it exerts a pressure on the latter, by which the decrease in its volume and closing of the intake valve (3) is determined.

The ventilation air is obligated to follow the direction of the discharge tube (6) and it arrives at the valve (7), small gap indicating possible omission this condition being realized with the necessity of overcoming the opposing resistance by the rubber sleeve (7a), resistance wherein the value is chosen relative to the value of the predetermined air pressure.

These calculations are determined in a certain way so that the discharge valve (7) can eliminate the ventilation air at a pressure with a higher value, having the goal of provoking a forced elimination of the clean and fresh air, which pushes the contaminated air to the outside.

The four ventilation orifices (7c) are placed between both toes of the foot to ensure an area of diffusion, a sufficient extension of the ventilation effect.

By way of nonlimiting example, the dimensions may be the following:

- diameter of the intake tube (2) and discharge tube (6) of 5 mm;

- diameter of the steel wire of the helical spring (5) of 1 mm;  
All other dimensions are variable according to the size of the shoe.